Environmental Profile

This LCA is calculated according to: ISO 14044, ISO 14040 and EN 15804

Ecochain v3.5.80

Product:	3026027 - PVC Branch 45° GY 160 S/S/S BC
Unit:	1 Piece
Manufacturer:	Wavin - FR - Varennes

The Wavin range of PVC pipes and fittings to be glued covers all the usual diameters and allows you to create networks that are 100% compatible, homogeneous and meet the requirements of the French market.

LCA standard:	EN15804+A2 (2019)
Standard database:	Worldwide - Ecoinvent v 3.6 Cut-Off
Externally verified:	Yes
Issue date:	24-11-2022
End of validity:	24-11-2027
Verifier:	Martijn van Hövell - SGS Search

This LCA was evaluated according to EN15804+A2. It was concluded that the LCA complies with this standard.

The LCA background information and project dossier have been registered in the online Ecochain application in the account Wavin - FR - Varennes (2020). (☑ = module declared, MND = module not declared).

A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
☑	☑	☑	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	☑	☑	☑	☑

Product stage

A1 Raw material supply A2 Transport A3 Manufacturing

Construction process stage

A4 Transport gate to site
A5 Assembly / Construction installation process

Use stage

B1 Use B2 Maintenance B3 Repair B4 Replacement B5 Refurbishment
B6 Operational energy use B7 Operational water use

End-of-Life stage

C1 De-construction demolition C2 Transport C3 Waste processing
C4 Disposal

Benefits and loads beyond the system boundaries

D Reuse- Recovery- Recycling- potential

Environmental impacts and parameters

GWP-total = EF EN15804+A2 Climate Change [kg CO2 eq]; **GWP-f** = EF Climate change - Fossil [kg CO2 eq]; **GWP-b** = EF EN15804+A2 Climate Change - Biogenic [kg CO2 eq]; **GWP-luluc** = EF EN15804+A2 Climate Change - Land use and LU change [kg CO2 eq]; **ODP** = EF Ozone depletion [kg CFC11 eq]; **AP** = EF Acidification [mol H+ eq]; **EP-fw** = EF Eutrophication, freshwater [kg P eq]; **EP-m** = EF Eutrophication, marine [kg N eq]; **EP-T** = EF Eutrophication, terrestrial [mol N eq]; **POCP** = EF Photochemical ozone formation [kg NMVOC eq]; **ADP-mm** = EF Resource use, minerals and metals [kg Sb eq]; **ADP-f** = EF Resource use, fossils [MJ]; **WDP** = EF Water use [m3 depriv.]; **PM** = EF Particulate matter [disease inc.]; **IR** = EF Ionising radiation [kBq U-235 eq]; **ETP-fw** = EF Ecotoxicity, freshwater [CTUe]; **HTP-c** = EF Human toxicity, cancer [CTUh]; **HTP-nc** = EF Human toxicity, non-cancer [CTUh]; **SQP** = EF Land use [Pt]; **PERE** = Use of renewable primary energy excluding renewable primary energy resources used as raw materials [MJ]; **PERM** = Use of renewable primary energy resources used as raw materials [MJ]; **PERT** = Total use of renewable primary energy resources [MJ]; **PENRE** = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials [MJ]; **PENRM** = Use of non-renewable primary energy resources used as raw materials [MJ]; **PENRT** = Total use of non-renewable primary energy resources [MJ]; **PET** = Total energy [MJ]; **SM** = Use of secondary material [kg]; **RSF** = Use of renewable secondary fuels [MJ]; **NRSF** = Use of non-renewable secondary fuels [MJ]; **FW** = Use of net fresh water [m3]; **HWD** = Hazardous waste disposed [kg]; **NHWD** = Non-hazardous waste disposed [kg]; **RWD** = Radioactive waste disposed [kg]; **CRU** = Components for re-use [kg]; **MFR** = Materials for recycling [kg]; **MER** = Materials for energy recovery [kg]; **EE** = Exported energy [MJ]; **EET** = Exported energy thermic [MJ]; **EEE** = Exported energy electric [MJ]

Statement of Confidentiality

Results

Environmental impact	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
GWP-total	kg CO2 eq	1.74E+0	8.48E-2	1.53E-1	1.98E+0	2.98E-2	1.95E+0	9.23E-3	-1.19E+0	2.78E+0
GWP-f	kg CO2 eq	2.67E+0	8.47E-2	1.20E-1	2.88E+0	2.98E-2	8.36E-1	9.23E-3	-1.54E+0	2.21E+0
GWP-b	kg CO2 eq	-9.33E-1	5.14E-5	3.34E-2	-9.00E-1	1.81E-5	1.12E+0	1.16E-5	3.51E-1	5.69E-1
GWP-luluc	kg CO2 eq	4.56E-3	3.00E-5	1.26E-4	4.71E-3	1.05E-5	3.76E-4	2.47E-7	-3.76E-3	1.34E-3
ODP	kg CFC11 eq	1.28E-6	1.95E-8	1.57E-8	1.31E-6	6.87E-9	1.05E-7	3.49E-10	-6.61E-7	7.65E-7
AP	mol H+ eq	1.34E-2	4.82E-4	7.26E-4	1.46E-2	1.70E-4	1.89E-3	8.49E-6	-7.19E-3	9.46E-3
EP-fw	kg P eq	1.36E-4	6.97E-7	2.87E-6	1.39E-4	2.45E-7	1.26E-5	1.11E-8	-8.27E-5	6.94E-5
EP-m	kg N eq	2.69E-3	1.73E-4	2.09E-4	3.07E-3	6.07E-5	4.84E-4	5.19E-6	-1.42E-3	2.20E-3
EP-T	mol N eq	2.89E-2	1.90E-3	2.58E-3	3.34E-2	6.69E-4	5.33E-3	3.38E-5	-1.58E-2	2.36E-2
POCP	kg NMVOC eq	8.89E-3	5.44E-4	6.19E-4	1.00E-2	1.91E-4	1.59E-3	1.16E-5	-5.06E-3	6.78E-3
ADP-mm	kg Sb eq	2.96E-3	2.19E-6	2.62E-6	2.96E-3	7.71E-7	7.48E-6	8.53E-9	-2.98E-5	2.94E-3
ADP-f	MJ	6.25E+1	1.30E+0	1.66E+0	6.55E+1	4.57E-1	5.00E+0	2.55E-2	-3.51E+1	3.58E+1
WDP	m3 depriv.	3.88E+0	3.99E-3	3.27E+0	7.15E+0	1.40E-3	1.86E-1	1.76E-4	-2.33E+0	5.00E+0
PM	disease inc.	1.15E-7	7.64E-9	1.04E-8	1.33E-7	2.69E-9	2.39E-8	1.75E-10	-8.06E-8	7.91E-8
IR	kBq U-235 eq	1.50E-1	5.68E-3	4.68E-3	1.61E-1	2.00E-3	1.79E-2	1.17E-4	-8.57E-2	9.49E-2
ETP-fw	CTUe	1.11E+2	1.06E+0	1.71E+0	1.14E+2	3.71E-1	3.63E+1	3.94E-1	-4.81E+1	1.03E+2
HTP-c	CTUh	2.62E-9	3.76E-11	1.26E-10	2.78E-9	1.32E-11	5.79E-10	7.05E-13	-1.21E-9	2.17E-9
HTP-nc	CTUh	7.38E-8	1.26E-9	3.35E-9	7.84E-8	4.43E-10	1.30E-8	7.59E-11	-3.26E-8	5.94E-8
SQP	Pt	1.03E+2	1.11E+0	9.55E+0	1.13E+2	3.91E-1	3.07E+0	6.51E-2	-1.35E+2	-1.81E+1
Resource use	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
PERE	MJ	1.75E+1	1.86E-2	2.43E+0	1.99E+1	6.56E-3	3.46E-1	9.34E-4	-2.31E+1	-2.79E+0
PERM	MJ	0	0	0	0	0	0	0	0	0
PERT	MJ	1.75E+1	1.86E-2	2.43E+0	1.99E+1	6.56E-3	3.46E-1	9.34E-4	-2.31E+1	-2.79E+0
PENRE	MJ	6.71E+1	1.38E+0	1.80E+0	7.02E+1	4.86E-1	5.32E+0	2.71E-2	-3.78E+1	3.83E+1
PENRM	MJ	0	0	0	0	0	0	0	0	0
PENRT	MJ	6.71E+1	1.38E+0	1.80E+0	7.02E+1	4.86E-1	5.32E+0	2.71E-2	-3.78E+1	3.83E+1
PET	MJ	8.46E+1	1.40E+0	4.23E+0	9.02E+1	4.92E-1	5.67E+0	2.80E-2	-6.09E+1	3.55E+1
SM	kg	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0
FW	m3	4.71E-2	1.47E-4	7.66E-2	1.24E-1	5.18E-5	5.16E-3	3.12E-5	-3.31E-2	9.59E-2

Output flows and waste categories	Unit	A1	A2	A3	A1-A3	C2	C3	C4	D	Total
HWD	kg	4.24E-4	3.32E-6	2.39E-6	4.30E-4	1.17E-6	8.47E-6	3.11E-8	-3.43E-5	4.05E-4
NHWD	kg	3.44E-1	8.06E-2	1.75E-2	4.42E-1	2.83E-2	1.85E-1	1.13E-1	-1.60E-1	6.08E-1
RWD	kg	1.35E-4	8.84E-6	4.83E-6	1.48E-4	3.11E-6	1.98E-5	1.66E-7	-7.89E-5	9.25E-5
CRU	kg	0	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0
EE	MJ	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0

Ecochain Technologies BV
H.J.E. Wenckebachweg 123, 1096 AM Amsterdam, The Netherlands
https://www.ecochain.com
+31 20 3035 777